

Complete and Partial Edentulism

April 2, 2004

ICD-9 C & M Meeting
Baltimore, MD



**UIC College
of Dentistry**

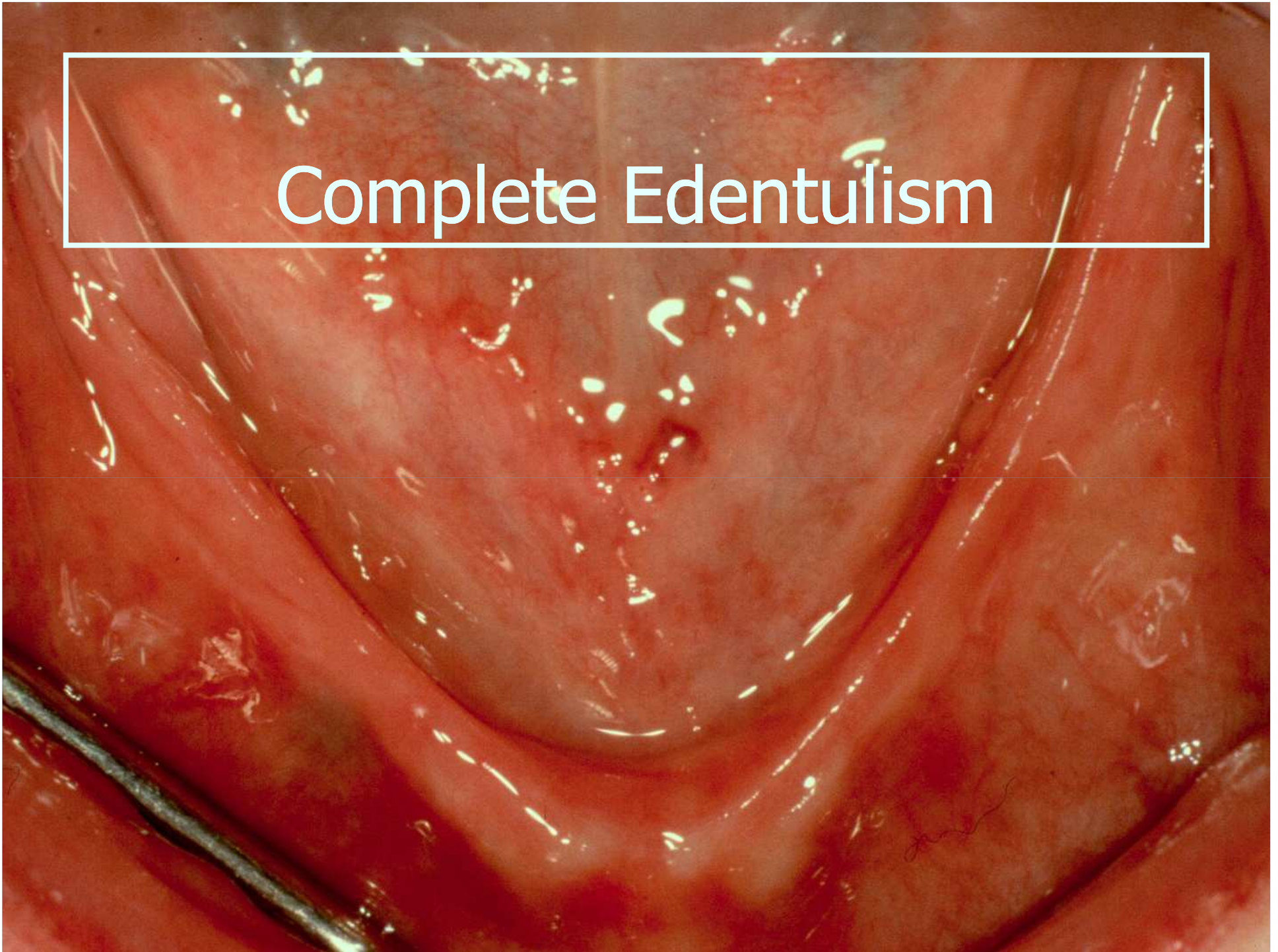
525 Other diseases and conditions of the teeth and supporting structures

■ **525.1** Classification of edentulism based on the etiology of tooth loss

- Trauma
- Extraction
- Periodontal Disease

Complete Edentulism

Complete Edentulism



Complete Edentulism

- Edentulism, defined as total tooth loss, is more prevalent among persons with less than a high school education, those without dental insurance, non-Hispanic blacks, and current everyday smokers (CDC, 1999)
- Between the 1950s and the early 1990s the prevalence of edentulism in the United States decreased from 50% to 42% among people aged 65 and older, from 28% to 11% for 45- to 64-year-olds, and from 5% to 2% for persons 18 to 44 years old (Oliver & Brown, 1993)

1998 National Health Interview Survey, National Center for Health Statistics, and the 1999 Behavioral Risk Factor Surveillance System, CDC

525 Other diseases and conditions of the teeth and supporting structures

- **525.4** Classification of complete edentulism based on the severity of the completely edentulous predicament



Complete Edentulism

■ Classification System for Complete Edentulism

McGarry TJ, Nimmo A, Skiba JF, Ahlstrom RH, Smith CR, Koumjian JH

J Prosthodont. 1999 Mar;8(1):27-39

Classification System for the Completely Edentulous Patient

Class I → Ideal or minimally compromised

Class II → Moderately compromised

Class III → Substantially compromised

Class IV → Severely compromised

Diagnostic Criteria

1. Bone height--mandibular
2. Maxillomandibular relationship
3. Residual ridge morphology--maxilla
4. Muscle attachments

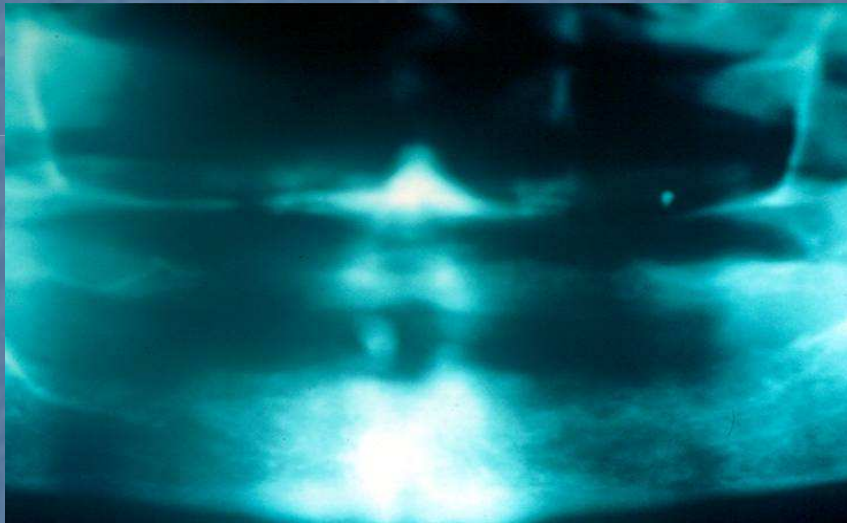
Diagnostic Criteria

1. Bone height--mandibular
2. Maxillomandibular relationship
3. Residual ridge morphology-maxilla
4. Muscle attachments

1. Bone Height

Mandibular

Type I

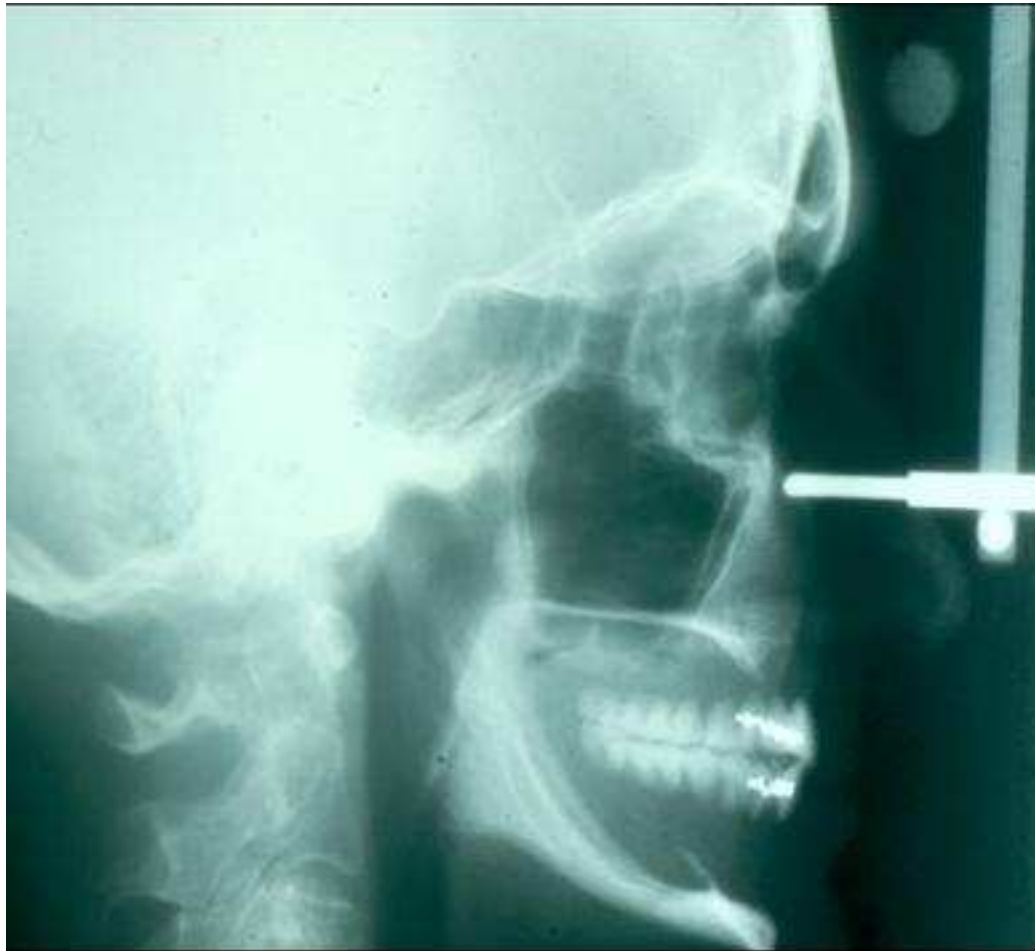


Residual bone height of 21mm or greater measured at the least vertical height of the mandible.

Type IV

Residual vertical bone height of 10 mm or less measured at the least vertical height of the mandible





2. Residual Ridge Morphology

Maxilla

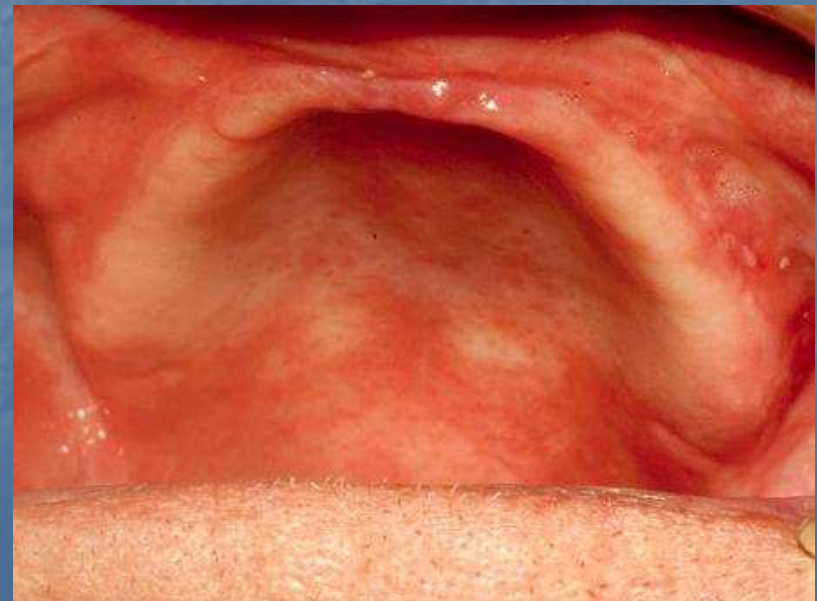
Type A

- Anterior labial and posterior buccal vestibular depth that resists vertical and horizontal movement of the denture base
- Palatal morphology that resists vertical and horizontal movement of the denture base
- Sufficient tuberosity definition that resists vertical and horizontal movement of the denture base
- Hamular notch is well defined to establish the posterior extension of the denture base
- Absence of tori or exostoses



Type D

- Loss of anterior labial and posterior buccal vestibules
- Maxillary palatal and/or lateral tori-rounded or undercut- that interferes with the posterior border of the denture
- Hyperplastic, redundant anterior ridge
- Palatal vault morphology that does not resist vertical or horizontal movement of the denture base
- Prominent anterior nasal spine



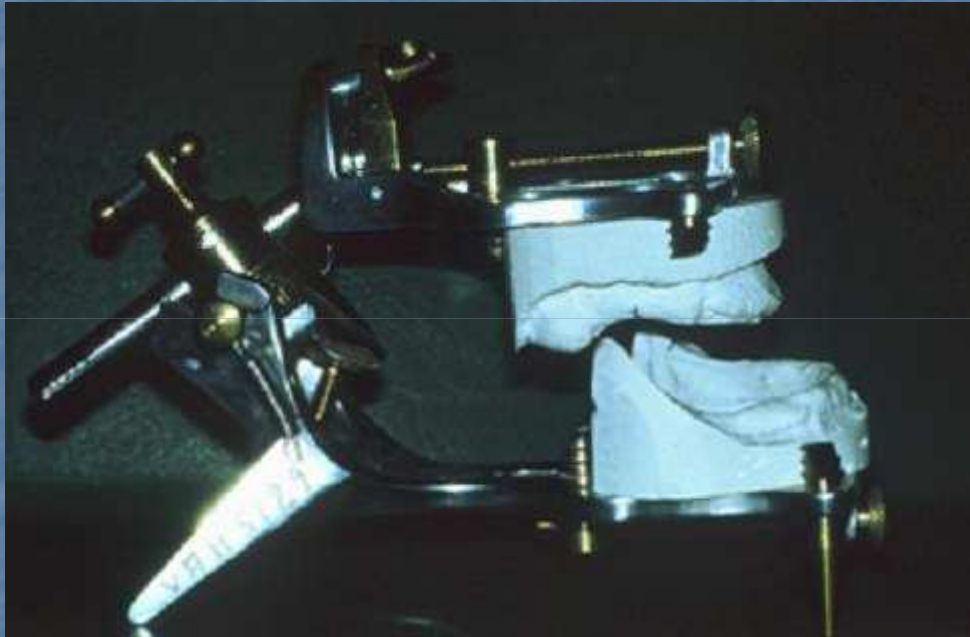
3. Maxillomandibular Relationship

Class I



Maxillomandibular relationship allows tooth position that has normal articulation with the teeth supported by the residual ridge.

Class III



Maxillomandibular relationship requires tooth position outside the normal ridge relation in order to attain phonetics and articulation; i.e., crossbite— anterior or posterior, tooth position not supported by the residual ridge.

4. Muscle Attachments

Type A

Adequate attached mucosal base without undue muscular impingement during normal function in all regions.



Type D

- Adequate attached mucosal base only in the posterior lingual region
- All other regions are detached



Diagnostic Classification of Complete Edentulism

Class I

This classification level describes the stage of edentulism that is most apt to be successfully treated by conventional prosthodontic techniques with complete denture prosthesis.

All four of the diagnostic criteria are favorable.

Class I

- Residual bone height of 21 mm or greater measured at the least vertical height of the mandible
- Class I maxillomandibular relationship



Class II

This classification level distinguishes itself with the noted continuation of the physical degradation of the denture supporting structures and in addition is characterized with the early onset of systemic disease interactions, localized soft tissue factors and patient management/lifestyle considerations.

- Residual bone height of 16-20 mm measured at the least vertical height of the mandible
- Class I maxillomandibular relationship
- Residual ridge morphology that resists horizontal and vertical movement of the denture base—Type A, B--Maxilla

Class II



Class III

This classification level is characterized by the need for surgical revision of denture supporting structures to allow for adequate prosthodontic function.

Additional factors now play a significant role in treatment outcomes.

Class III

- Residual bone height of 11-15 mm measured at the least vertical height of the mandible
- Class I, II and III maxillomandibular relationship
- Residual ridge morphology has minimum influence to resist horizontal or vertical movement of the denture base—Type C—Maxilla
- Location of muscle attachments with moderate influence on denture base stability and retention—Type C--Mandible



Class IV

- This classification level depicts the most debilitated edentulous condition
- Surgical reconstruction is almost always indicated but can not always be accomplished due to the patient's health, desires, past dental history and financial considerations
- When surgical revision is not selected, prosthodontic techniques of a specialized nature must be used in order to achieve an adequate treatment outcome

Class IV

- Residual bone height of least vertical height of the mandible
- Class I, II and III maxillomandibular relationships
- Residual ridge offers no resistance to horizontal or vertical movement —
Type D—Maxilla
- Location of muscle attachments with significant influence on denture base stability and retention—
Type D and E--Mandible



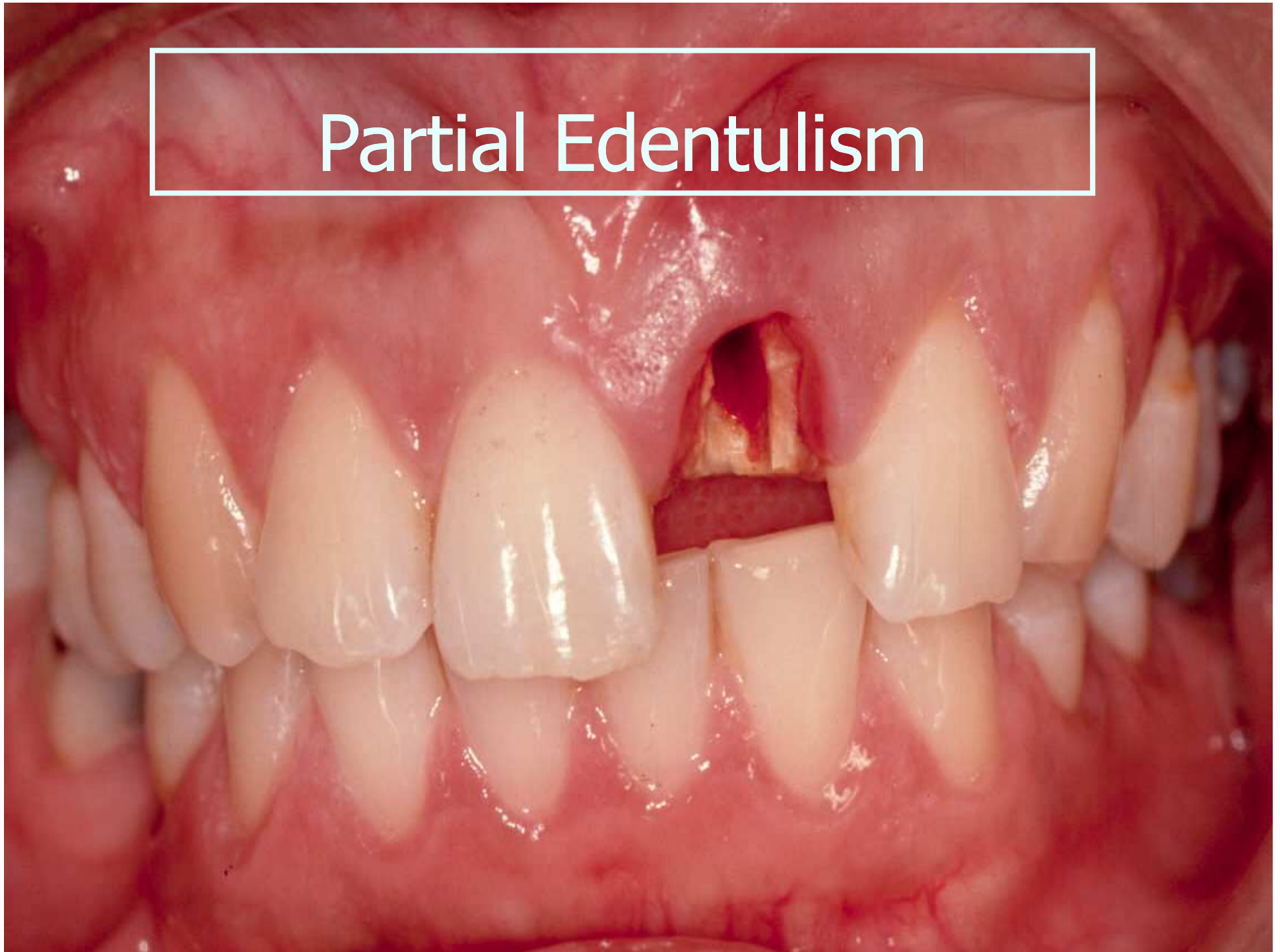


Completely Dentate

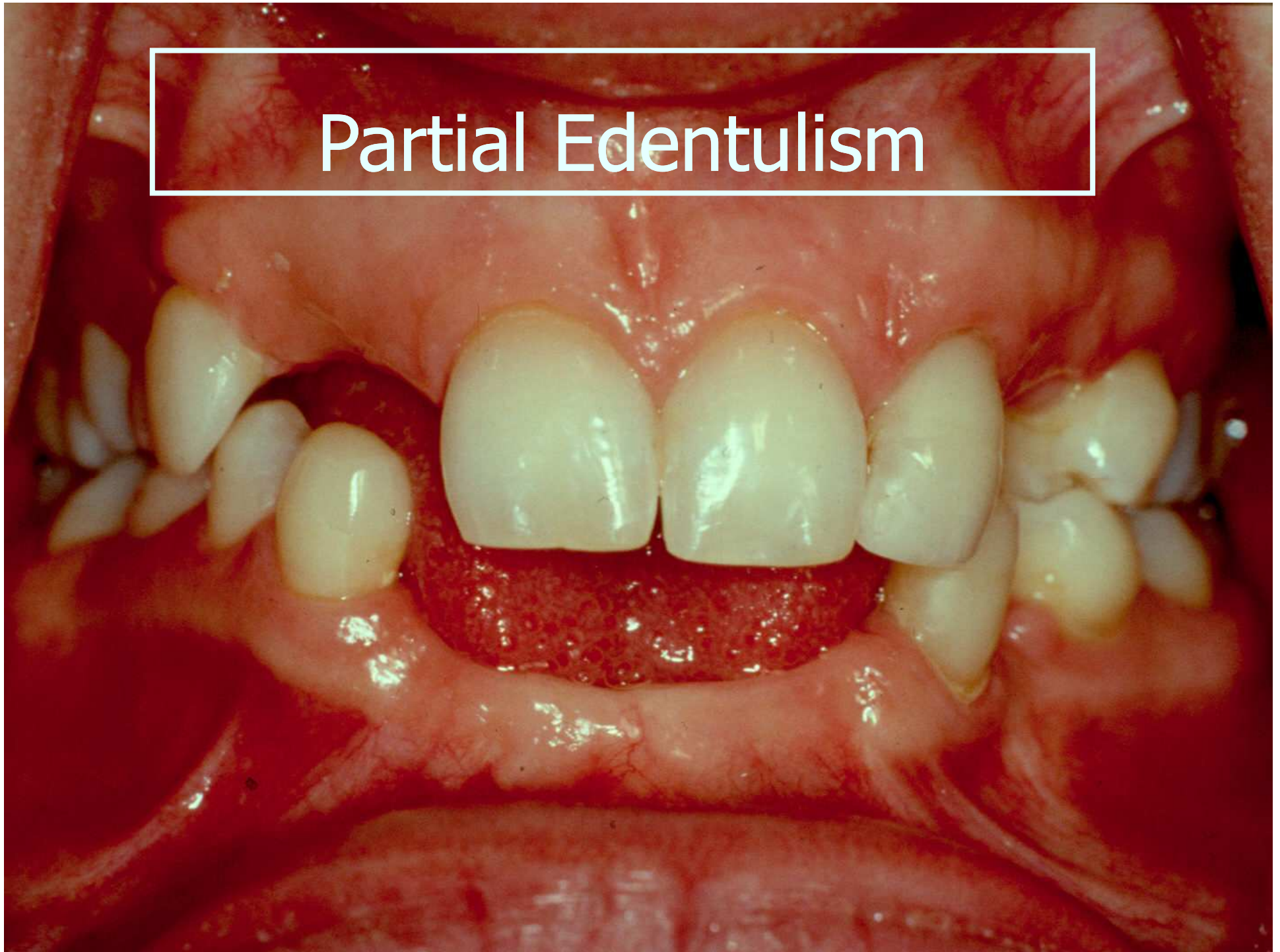


Partial Edentulism

Partial Edentulism



Partial Edentulism



525 Other diseases and conditions of the teeth and supporting structures

- **525.5** Classification of partial edentulism based on the severity of the partially edentulous predicament



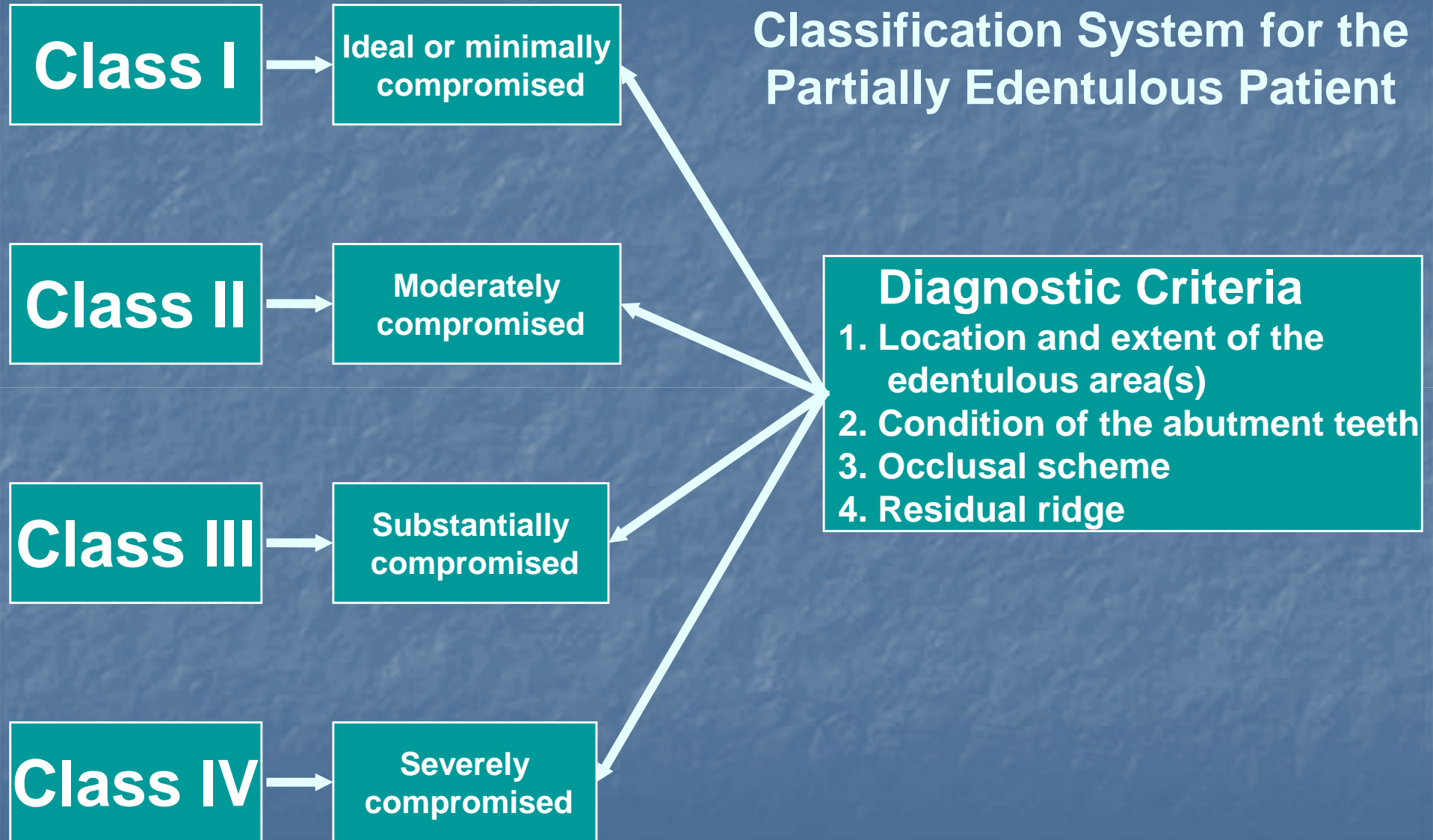
Partial Edentulism

■ Classification System for Partial Edentulism

McGarry TJ, Nimmo A, Skiba JF, Ahlstrom RH, Smith CR, Koumjian JH, Arbree NS

J Prosthodont. 2002 Sep;11(3):181-93

Classification System for the Partially Edentulous Patient



DIAGNOSTIC CRITERIA

- 1. Location and extent of the edentulous area(s)**
- 2. Condition of the abutment teeth**
- 3. Occlusal scheme**
- 4. Residual ridge**

		Class I	Class II	Class III	Class IV
Location & Extent of Edentulous Areas					
	Ideal or minimally compromised-single arch				
	Moderately compromised-both arches				
	Substantially compromised- >3 teeth				
	Severely compromised-guarded prognosis				
	Congenital or acquired maxillofacial defect				
Abutment Tooth Condition					
	Ideal or minimally compromised				
	Moderately compromised-local adjunctive tx				
	Substantially compromised-mod adjunctive tx				
	Severely compromised-extensive adjunctive tx				
Occlusal Scheme					
	Ideal or minimally compromised				
	Moderately compromised-local adjunctive tx				
	Substantially compromised-occlusal scheme				
	Severely compromised-change in VDO				
Residual Ridge					
	Class I Edentulous				
	Class II Edentulous				
	Class III Edentulous				
	Class IV Edentulous				
Conditions Creating a Guarded Prognosis					
	Severe oral manifestations of systemic disease				
	Maxillomandibular dyskinesia and/or ataxia				
	Refractory patient				

Partial Edentulism





- Committed to developing a dental educational curriculum that is diagnosis driven
- The only dental school in the third largest city in the US providing service to more than 100,000 patient visits per year
- Need for clinical studies that have a common, transparent and systematic diagnosis. Achieved by employing the evidence-based process to assemble, organize and synthesize clinical research in a rigorous and transparent fashion. This body of evidence, coupled with clinical expertise, will lead to the creation of guidelines designed to enhance clinical judgment and decision-making

Concluding Remarks

- The codes being proposed are part of normal diagnostic data collection that occurs for all patients, meeting with the existing standard of care in dentistry
- The proposed new codes are within the scope and conventions of the existing classification
- By adopting these codes into the public domain, dental educators, researchers and clinicians will be able to contribute significantly to the body of evidence

Acknowledgements

- Dr. Stephen Campbell UIC COD
- Dr. Kent Knoernschild UIC COD
- Dr. John Zarb UIC COD
- Dr. Thomas McGarry ACP
- Dr. Barry Shipman ACP
- Dr. Rosemary Walker UIC SBHI
- Ms. Teri Jorwic UIC SBHI
- Dr. Bruce Graham UIC COD
- Ms. Lea Alexander UIC COD

